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PROGRESSIVE DEFORMATION, FOLD ROTATION AND MELANGE FORMATION IN MIDDLE ORDOVICIAN FLYSCH NEAR ALBANY, NEW YORK

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Accretionary processes in trenches have only been observed indirectly. An analogous environment existed when flysch deposits were deformed in front of the advancing Taconic allochthon. Austin Glen greywackes and shales show an eastward increase in deformation intensity leading to melange formation adjacent to the Taconic front. Twelve to fifteen km west of the allochthonous rocks bedded flysch is virtually undeformed. Eastward are east-dipping zones of thrusting and kink or asymmetric folding including one narrow zone of dismembered arenite in a phacoidally cleaved shale; interpreted as a zone of high shear strain. Nearer the Taconic front large, moderately to steeply plunging and steeply SE inclined folds are common. Hinges are often sheared and some folds are downwards facing. Large areas consist of disrupted greywacke beds, including fold hinges, in a phacoidally cleaved shale. Fold hinge lines become more easterly trending toward the Taconic front, particularly in the phacoidally cleaved shales where shear strains may have been higher. Horizontal hinge lines have probably been rotated towards "transport direction" in zones of high shear strain. Nearest the Taconic front exotic blocks

and intense deformation characterize rocks locally called "wild-flysch." This is the result of the most proximal deposition, including olistoliths, within a zone of high shear strain in front of active Taconic thrusts.